

## CLAIMS

### **What is claimed is:**

1. A method in a data processing system, wherein the data processing system comprises source code and the source code comprises a plurality of lines, the  
5 method comprising the steps of:  
displaying a graphical representation of the source code, wherein the graphical representation has portions that correspond to the lines;  
initiating an automated process that processes each of the lines; and  
while the automated process processes each of the lines,  
10 displaying the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it visually appears that progression of the automated process is animated.
2. The method of claim 1, further comprising the step of compiling the line before displaying the portion of the graphical representation that corresponds to the line.
- 15 3. The method of claim 1, wherein while the automated process processes each of the lines, the method further comprises the step of displaying the line of source code in a visually distinctive manner.
4. The method of claim 1, wherein the graphical representation comprises a class diagram.
- 20 5. The method of claim 1, wherein the graphical representation comprises a sequence diagram.

6. A method in a data processing system, wherein the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

5 displaying a graphical representation of the source code, wherein the graphical representation has portions that correspond to the lines; and  
for each of the lines,  
displaying the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it appears that progression through the code is animated.

10 7. The method of claim 6, further comprising the step of compiling the line before displaying the portion of the graphical representation that corresponds to the line.

8. The method of claim 6, wherein for each of the lines, the method further comprises the step of displaying the line of source code in a visually distinctive manner.

15 9. The method of claim 6, wherein the graphical representation comprises a class diagram.

10. The method of claim 6, wherein the graphical representation comprises a sequence diagram.

11. A method in a data processing system, wherein the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

5 displaying a graphical representation of the plurality of lines such that at least one of the lines is not represented in the graphical representation;  
initiating an automated process on each of the lines of the source code;  
receiving an indication to suspend the automated process when the automated process encounters one of the lines that is represented in the graphical representation; and  
10 while the automated process is being performed on each of the lines of source code,  
determining whether the line is represented in the graphical representation; and  
when it is determined that the line is represented in the graphical representation,  
15 suspending the automated process.

12. The method of claim 11, wherein while the automated process is being performed on each of the lines of source code, the method further comprises the step of displaying the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it visually appears that progression of the automated process is animated.  
20

13. The method of claim 12, wherein while the automated process is being performed on each of the lines of source code, the method further comprises the step of displaying the line of source code in a visually distinctive manner.

25 14. The method of claim 11, further comprising the step of compiling the line before determining whether the line is represented in the graphical representation.

15. The method of claim 11, wherein the graphical representation comprises a class diagram.

16. The method of claim 11, wherein the graphical representation comprises a sequence diagram.

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17. A method in a data processing system, wherein the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

5 displaying a graphical representation of the source code;  
initiating an automated process to be performed on each of the lines of the source  
code;  
receiving an indication to suspend the automated process when the automated  
process encounters a selected one of the lines; and  
while the automated process is being performed on each of the lines of source  
10 code,  
determining whether the line is the selected line; and  
when it is determined that the line is the selected line,  
suspending the automated process.

18. The method of claim 17, wherein while the automated process is being  
15 performed on each of the lines of source code, the method further comprises the step of  
displaying the portion of the graphical representation that corresponds to the line in a  
visually distinctive manner such that it visually appears that progression of the  
automated process is animated.

19. The method of claim 18, wherein while the automated process is being  
20 performed on each of the lines of source code, the method further comprises the step of  
displaying the line of source code in a visually distinctive manner.

20. The method of claim 17, further comprising the step of compiling the line  
before determining whether the line is the selected line.

21. The method of claim 17, wherein the graphical representation comprises a  
25 class diagram.

22. The method of claim 17, wherein the graphical representation comprises a sequence diagram.

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23. A method in a data processing system, wherein the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

5 displaying a graphical representation of the source code;  
receiving an indication of a first of the plurality of lines of the source code;  
selecting a second of the plurality of lines of the source code;  
determining whether the second line is the same as the first line; and  
when it is determined that the second line is not the same as the first line,  
10 displaying the graphical representation of the second line in a visually  
distinctive manner.

24. The method of claim 23, wherein when it is determined that the second line is not the same as the first line, the method further comprises the step of displaying the second line of the source code in a visually distinctive manner.

25. The method of claim 23, wherein when it is determined that the second  
15 line is not the same as the first line, the method further comprises the steps of:  
selecting a third of the plurality of lines of the source code;  
determining whether the third line is the same as the first line; and  
when it is determined that the third line is not the same as the first line,  
20 displaying the graphical representation of the third line in a  
visually distinctive manner.

26. The method of claim 25, wherein when it is determined that the third line is not the same as the first line, the method further comprises the step of displaying the third line of the source code in a visually distinctive manner.

27. The method of claim 23, wherein the graphical representation comprises a  
25 class diagram.

28. The method of claim 23, wherein the graphical representation comprises a sequence diagram.

FIG. 2 is a sequence diagram illustrating a method of claim 23.



29. A method in a data processing system, wherein the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

5 displaying a graphical representation of the plurality of lines such that at least one  
of the lines is not represented in the graphical representation;  
initiating an automated process on each of the lines of the source code;  
while the automated process is being performed on each of the lines of source  
code,  
compiling the line;  
10 determining whether the compiled line produces an error; and  
when it is determined that the compiled line produces the error,  
suspending the automated process.

30. The method of claim 29, wherein while the automated process is being  
performed on each of the lines of source code, the method further comprises the step of  
15 displaying the portion of the graphical representation that corresponds to the line in a  
visually distinctive manner such that it visually appears that progression of the  
automated process is animated.

31. The method of claim 30, wherein while the automated process is being  
performed on each of the lines of source code, the method further comprises the step of  
20 displaying the line of source code in a visually distinctive manner.

32. The method of claim 29, wherein the graphical representation comprises a  
class diagram.

33. The method of claim 29, wherein the graphical representation comprises a  
sequence diagram.

34. A method in a data processing system, wherein the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

5 displaying a graphical representation of the source code;  
selecting one of the plurality of lines of the source code;  
compiling the selected line;  
determining whether the compiled line produces an error; and  
when it is determined that the compiled line does not produce an error,  
10 displaying the graphical representation of the selected line in a visually  
distinctive manner.

35. The method of claim 34, wherein when it is determined that the compiled line does not produce an error, the method further comprises the step of displaying the selected line of source code in a visually distinctive manner.

36. The method of claim 34, wherein when it is determined that the compiled  
15 line does not produce an error, the method further comprises the steps of:  
selecting a second of the plurality of lines of the source code;  
compiling the second line;  
determining whether the compiled second line produces an error; and  
when it is determined that the compiled second line does not produce an error,  
20 displaying the graphical representation of the second line in a visually  
distinctive manner.

37. The method of claim 36, wherein when it is determined that the compiled second line does not produce an error, the method further comprises the step of displaying the second line of source code in a visually distinctive manner.

25 38. The method of claim 34, wherein the graphical representation comprises a class diagram.

39. The method of claim 34, wherein the graphical representation comprises a sequence diagram.

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40. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

5 displaying a graphical representation of the source code, wherein the graphical representation has portions that correspond to the lines;  
initiating an automated process that processes each of the lines; and  
while the automated process processes each of the lines,  
10 displaying the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it visually appears that progression of the automated process is animated.

41. The computer-readable medium of claim 40, wherein the method further comprises the step of compiling the line before displaying the portion of the graphical representation that corresponds to the line.

15 42. The computer-readable medium of claim 40, wherein while the automated process processes each of the lines, the method further comprises the step of displaying the line of source code in a visually distinctive manner.

43. The computer-readable medium of claim 40, wherein the graphical representation comprises a class diagram.

20 44. The computer-readable medium of claim 40, wherein the graphical representation comprises a sequence diagram.

45. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

- 5 displaying a graphical representation of the source code, wherein the graphical representation has portions that correspond to the lines; and
- for each of the lines,
- displaying the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it appears that
- 10 progression through the code is animated.

46. The computer-readable medium of claim 45, wherein the method further comprises the step of compiling the line before displaying the portion of the graphical representation that corresponds to the line.

47. The computer-readable medium of claim 45, wherein for each of the lines,
- 15 the method further comprises the step of displaying the line of source code in a visually distinctive manner.

48. The computer-readable medium of claim 45, wherein the graphical representation comprises a class diagram.

49. The computer-readable medium of claim 45, wherein the graphical
- 20 representation comprises a sequence diagram.

50. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

- 5 displaying a graphical representation of the plurality of lines such that at least one of the lines is not represented in the graphical representation;  
initiating an automated process on each of the lines of the source code;  
receiving an indication to suspend the automated process when the automated process encounters one of the lines that is represented in the graphical  
10 representation; and  
while the automated process is being performed on each of the lines of source code,  
determining whether the line is represented in the graphical representation; and  
15 when it is determined that the line is represented in the graphical representation,  
suspending the automated process.

51. The computer-readable medium of claim 50, wherein while the automated process is being performed on each of the lines of source code, the method further  
20 comprises the step of displaying the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it visually appears that progression of the automated process is animated.

52. The computer-readable medium of claim 51, wherein while the automated process is being performed on each of the lines of source code, the method further  
25 comprises the step of displaying the line of source code in a visually distinctive manner.

53. The computer-readable medium of claim 50, wherein the method further comprises the step of compiling the line before determining whether the line is represented in the graphical representation.

54. The computer-readable medium of claim 50, wherein the graphical representation comprises a class diagram.

55. The computer-readable medium of claim 50, wherein the graphical representation comprises a sequence diagram.

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56. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

- 5 displaying a graphical representation of the source code;  
initiating an automated process to be performed on each of the lines of the source code;  
receiving an indication to suspend the automated process when the automated process encounters a selected one of the lines; and  
10 while the automated process is being performed on each of the lines of source code,  
determining whether the line is the selected line; and  
when it is determined that the line is the selected line,  
suspending the automated process.

- 15 57. The computer-readable medium of claim 56, wherein while the automated process is being performed on each of the lines of source code, the method further comprises the step of displaying the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it visually appears that progression of the automated process is animated.

- 20 58. The computer-readable medium of claim 57, wherein while the automated process is being performed on each of the lines of source code, the method further comprises the step of displaying the line of source code in a visually distinctive manner.

- 25 59. The computer-readable medium of claim 56, wherein the method further comprises the step of compiling the line before determining whether the line is the selected line.

60. The computer-readable medium of claim 56, wherein the graphical representation comprises a class diagram.



61. The computer-readable medium of claim 56, wherein the graphical representation comprises a sequence diagram.

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62. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

- 5 displaying a graphical representation of the source code;
- receiving an indication of a first of the plurality of lines of the source code;
- selecting a second of the plurality of lines of the source code;
- determining whether the second line is the same as the first line; and
- when it is determined that the second line is not the same as the first line,
- 10 displaying the graphical representation of the second line in a visually distinctive manner.

- 63. The computer-readable medium of claim 62, wherein when it is determined that the second line is not the same as the first line, the method further comprises the step of displaying the second line of the source code in a visually
- 15 distinctive manner.

- 64. The computer-readable medium of claim 62, wherein when it is determined that the second line is not the same as the first line, the method further comprises the steps of:
- selecting a third of the plurality of lines of the source code;
- 20 determining whether the third line is the same as the first line; and
- when it is determined that the third line is not the same as the first line,
- displaying the graphical representation of the third line in a visually distinctive manner.

- 65. The computer-readable medium of claim 64, wherein when it is
- 25 determined that the third line is not the same as the first line, the method further comprises the step of displaying the third line of the source code in a visually distinctive manner.

66. The computer-readable medium of claim 62, wherein the graphical representation comprises a class diagram.

67. The computer-readable medium of claim 62, wherein the graphical representation comprises a sequence diagram.

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68. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

- 5 displaying a graphical representation of the plurality of lines such that at least one of the lines is not represented in the graphical representation;  
initiating an automated process on each of the lines of the source code;  
while the automated process is being performed on each of the lines of source code,  
10 compiling the line;  
determining whether the compiled line produces an error; and  
when it is determined that the compiled line produces the error,  
suspending the automated process.

69. The computer-readable medium of claim 68, wherein while the automated  
15 process is being performed on each of the lines of source code, the method further comprises the step of displaying the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it visually appears that progression of the automated process is animated.

70. The computer-readable medium of claim 69, wherein while the automated  
20 process is being performed on each of the lines of source code, the method further comprises the step of displaying the line of source code in a visually distinctive manner.

71. The computer-readable medium of claim 68, wherein the graphical representation comprises a class diagram.

72. The computer-readable medium of claim 68, wherein the graphical  
25 representation comprises a sequence diagram.

73. A computer-readable medium containing instructions for controlling a data processing system to perform a method, the data processing system comprises source code and the source code comprises a plurality of lines, the method comprising the steps of:

- 5 displaying a graphical representation of the source code;
- selecting one of the plurality of lines of the source code;
- compiling the selected line;
- determining whether the compiled line produces an error; and
- when it is determined that the compiled line does not produce an error,
- 10 displaying the graphical representation of the selected line in a visually distinctive manner.

74. The computer-readable medium of claim 73, wherein when it is determined that the compiled line does not produce an error, the method further comprises the step of displaying the selected line of source code in a visually distinctive
- 15 manner.

75. The computer-readable medium of claim 73, wherein when it is determined that the compiled line does not produce an error, the method further comprises the steps of:
- selecting a second of the plurality of lines of the source code;
  - 20 compiling the second line;
  - determining whether the compiled second line produces an error; and
  - when it is determined that the compiled second line does not produce an error,
  - displaying the graphical representation of the second line in a visually distinctive manner.

76. The computer-readable medium of claim 75, wherein when it is determined that the compiled second line does not produce an error, the method further comprises the step of displaying the second line of source code in a visually distinctive manner.

5 77. The computer-readable medium of claim 73, wherein the graphical representation comprises a class diagram.

78. The computer-readable medium of claim 73, wherein the graphical representation comprises a sequence diagram.

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79. A data processing system comprising:

a secondary storage device further comprising source code wherein the source code comprises a plurality of lines;

a memory device further comprising a program that displays a graphical representation of the plurality of lines such that at least one of the lines is not represented in the graphical representation, that initiates an automated process on each of the lines of the source code, that receives an indication to suspend the automated process when the automated process encounters one of the lines that is represented in the graphical representation, and while the automated process is being performed on each of the lines of source code, the program determines whether the line is represented in the graphical representation, and when it is determined that the line is represented in the graphical representation, the program suspends the automated process; and

a processor for running the program.

80. The data processing system of claim 79, wherein while the automated process is being performed on each of the lines of source code, the program further displays the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it visually appears that progression of the automated process is animated.

81. The data processing system of claim 80, wherein while the automated process is being performed on each of the lines of source code, the program further displays the line of source code in a visually distinctive manner.

82. The data processing system of claim 79, wherein the program further compiles the line before determining whether the line is represented in the graphical representation.

83. The data processing system of claim 79, wherein the graphical representation comprises a class diagram.

84. The data processing system of claim 79, wherein the graphical representation comprises a sequence diagram.

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85. A data processing system comprising:

a secondary storage device further comprising source code wherein the source code comprises a plurality of lines;

5 a memory device further comprising a program that displays a graphical representation of the source code, that initiates an automated process to be performed on each of the lines of the source code, that receives an indication to suspend the automated process when the automated process encounters a selected one of the lines, and while the automated process is being performed on each of the lines of source code, the program  
10 determines whether the line is the selected line, and when it is determined that the line is the selected line, the program suspends the automated process; and

a processor for running the program.

86. The data processing system of claim 85, wherein while the automated  
15 process is being performed on each of the lines of source code, the program further displays the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it visually appears that progression of the automated process is animated.

87. The data processing system of claim 86, wherein while the automated  
20 process is being performed on each of the lines of source code, the program further displays the line of source code in a visually distinctive manner.

88. The data processing system of claim 85, wherein the program further compiles the line before determining whether the line is the selected line.

89. The data processing system of claim 85, wherein the graphical  
25 representation comprises a class diagram.



91. A data processing system comprising:

a secondary storage device further comprising source code wherein the source code comprises a plurality of lines;

5 a memory device further comprising a program that displays a graphical representation of the source code, that receives an indication of a first of the plurality of lines of the source code, that selects a second of the plurality of lines of the source code, that determines whether the second line is the same as the first line, and when it is determined that the second line is not the same as the first line, the program displays the graphical  
10 representation of the second line in a visually distinctive manner; and  
a processor for running the program.

92. The data processing system of claim 91, wherein when it is determined that the second line is not the same as the first line, the program further displays the second line of the source code in a visually distinctive manner.

15 93. The data processing system of claim 91, wherein when it is determined that the second line is not the same as the first line, the program further selects a third of the plurality of lines of the source code, determines whether the third line is the same as the first line, and when it is determined that the third line is not the same as the first line, the program displays the graphical representation of the third line in a visually distinctive  
20 manner.

94. The data processing system of claim 93, wherein when it is determined that the third line is not the same as the first line, the program further displays the third line of the source code in a visually distinctive manner.

25 95. The data processing system of claim 91, wherein the graphical representation comprises a class diagram.

96. The data processing system of claim 91, wherein the graphical representation comprises a sequence diagram.

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97. A data processing system comprising:

a secondary storage device further comprising source code wherein the source code comprises a plurality of lines;

5 a memory device further comprising a program that displays a graphical representation of the plurality of lines such that at least one of the lines is not represented in the graphical representation, that initiates an automated process on each of the lines of the source code, while the automated process is being performed on each of the lines of source code, the program compiles the line, determines whether the compiled line produces an error, and when it is determined that the compiled line produces the error, the program suspends the automated process; and  
10 a processor for running the program.

98. The data processing system of claim 97, wherein while the automated process is being performed on each of the lines of source code, the program further  
15 displays the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it visually appears that progression of the automated process is animated.

99. The data processing system of claim 98, wherein while the automated process is being performed on each of the lines of source code, the program further  
20 displays the line of source code in a visually distinctive manner.

100. The data processing system of claim 97, wherein the graphical representation comprises a class diagram.

101. The data processing system of claim 97, wherein the graphical representation comprises a sequence diagram.

102. A data processing system comprising:

a secondary storage device further comprising source code wherein the source code comprises a plurality of lines;

a memory device further comprising a program that displays a graphical representation of the source code, that selects one of the plurality of lines of the source code; that compiles the selected line, that determines whether the compiled line produces an error, and when it is determined that the compiled line does not produce an error, the program displays the graphical representation of the selected line in a visually distinctive manner; and

a processor for running the program.

103. The data processing system of claim 102, wherein when it is determined that the compiled line does not produce an error, the program further displays the selected line of source code in a visually distinctive manner.

104. The data processing system of claim 102, wherein when it is determined that the compiled line does not produce an error, the program further selects a second of the plurality of lines of the source code, compiles the second line, determines whether the compiled second line produces an error, and when it is determined that the compiled second line does not produce an error, the program displays the graphical representation of the second line in a visually distinctive manner.

105. The data processing system of claim 104, wherein when it is determined that the compiled second line does not produce an error, the program further displays the second line of source code in a visually distinctive manner.

106. The data processing system of claim 102, wherein the graphical representation comprises a class diagram.

107. The data processing system of claim 102, wherein the graphical representation comprises a sequence diagram.

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108. A system having source code wherein the source code comprises a plurality of lines, the system comprising:

means for displaying a graphical representation of the source code, wherein the graphical representation has portions that correspond to the lines;

5 means for initiating an automated process that processes each of the lines; and

means for displaying the portion of the graphical representation that corresponds to the line in a visually distinctive manner such that it visually appears that progression of the automated process is animated while the automated process processes each of the lines.

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